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NEWS 7 OCT 21 BIOSIS file reloaded and enhanced  
NEWS 8 OCT 28 BIOSIS file segment of TOXCENTER reloaded and enhanced  
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NEWS 10 DEC 08 CABA reloaded with left truncation  
NEWS 11 DEC 08 IMS file names changed  
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NEWS 13 DEC 09 STN Entry Date available for display in REGISTRY and CA/CAPLUS  
NEWS 14 DEC 17 DGENE: Two new display fields added  
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NEWS 16 DEC 19 CROPU no longer updated; subscriber discount no longer  
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NEWS 17 DEC 22 Additional INPI reactions and pre-1907 documents added to CAS  
databases  
NEWS 18 DEC 22 IFIPAT/IFIUDB/IFICDB reloaded with new data and search fields  
NEWS 19 DEC 22 ABI-INFORM now available on STN  
NEWS 20 JAN 27 Source of Registration (SR) information in REGISTRY updated  
and searchable  
NEWS 21 JAN 27 A new search aid, the Company Name Thesaurus, available in  
CA/CAPLUS  
  
NEWS EXPRESS DECEMBER 28 CURRENT WINDOWS VERSION IS V7.00, CURRENT  
MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),  
AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003  
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FILE 'HOME' ENTERED AT 15:39:14 ON 02 FEB 2004

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=> s (holo-phycobiliprotein)  
L1 2 (HOLO-PHYCOBILIPROTEIN)

=> d l1 ti abs ibib tot

L1 ANSWER 1 OF 2 USPATFULL on STN  
TI Engineering of living cells for the expression of **holo-  
phycobiliprotein**-based constructs  
AB Recombinant cells which express a fluorescent **holo-  
phycobiliprotein** fusion protein and methods of use are  
described. The cells comprises a bilin, a recombinant bilin reductase,  
an apo-phycobiliprotein fusion protein precursor of the fusion protein  
comprising a corresponding apo-phycobiliprotein domain, and a  
recombinant phycobiliprotein domain-bilin lyase, which components react  
to form the **holo-phycobiliprotein** fusion protein.  
Also described are **holo-phycobiliprotein** based  
transcription reporter cells and assays, which cells conditionally  
express a heterologous-to-the-cell, fluorescent, first **holo-  
phycobiliprotein** domain.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:37640 USPATFULL  
TITLE: Engineering of living cells for the expression of  
**holo-phycobiliprotein**-based  
constructs  
INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES  
Tooley, Aaron J., Berkeley, CA, UNITED STATES  
Cai, Yuping, Carmel, IN, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003027285	A1	20030206
APPLICATION INFO.:	US 2001-919486	A1	20010731 (9)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010		

NUMBER OF CLAIMS: 24  
EXEMPLARY CLAIM: 1  
NUMBER OF DRAWINGS: 3 Drawing Page(s)  
LINE COUNT: 918  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 2 OF 2 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN  
TI New recombinant cell comprising a heterologous-to-the-cell, fluorescent,  
first **holo-phycobiliprotein** domain fused a  
heterologous protein domain, useful for expressing a **holo-  
phycobiliprotein** fusion protein.  
AN 2003-466144 [44] WPIDS  
AB US2003027285 A UPAB: 20030710  
NOVELTY - A recombinant cell expressing a **holo-  
phycobiliprotein** fusion protein comprising a heterologous-to-the-  
cell, fluorescent, first **holo-phycobiliprotein** domain  
fused a heterologous protein domain, is new.  
DETAILED DESCRIPTION - A recombinant cell expressing a **holo  
-phycobiliprotein** fusion protein comprising a  
heterologous-to-the-cell, fluorescent, first **holo-  
phycobiliprotein** domain fused a heterologous protein domain. The  
cell makes and comprises components such as a bilin, a recombinant bilin  
reductase, an apo-phycobiliprotein fusion protein precursor of the fusion  
protein comprising a corresponding apo-phycobiliprotein domain, and a  
recombinant phycobiliprotein domain-bilin lyase, which components react  
inside the cell to form the **holo-phycobiliprotein**  
fusion protein.  
An INDEPENDENT CLAIM is also included for making a **holo-  
phycobiliprotein** fusion protein by growing the cell under  
conditions where the cell expresses the **holo-  
phycobiliprotein** fusion protein.  
USE - The cells are useful for expressing **holo-  
phycobiliprotein**-based constructs, useful in enzymology and  
chemistry of phycobiliprotein synthesis. The phycobiliproteins are useful  
as in vivo fluorescent protein probes.

Dwg.0/3

ACCESSION NUMBER: 2003-466144 [44] WPIDS  
DOC. NO. NON-CPI: N2003-370782  
DOC. NO. CPI: C2003-124291  
TITLE: New recombinant cell comprising a heterologous-to-the-  
cell, fluorescent, first **holo-  
phycobiliprotein** domain fused a heterologous  
protein domain, useful for expressing a **holo-  
phycobiliprotein** fusion protein.  
DERWENT CLASS: B04 D16 P13 S03  
INVENTOR(S): CAI, Y; GLAZER, A N; TOOLEY, A J  
PATENT ASSIGNEE(S): (CAIY-I) CAI Y; (GLAZ-I) GLAZER A N; (TOOL-I) TOOLEY A J;  
(REGC) UNIV CALIFORNIA  
COUNTRY COUNT: 100  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG																		
US 2003027285	A1	20030206	(200344)*		13																		
WO 2003012448	A1	20030213	(200344)	EN																			
RW:	AT	BE	BG	CH	CY	CZ	DE	DK	EA	EE	ES	FI	FR	GB	GH	GM	GR	IE	IT	KE	LS	LU	
	MC	MW	MZ	NL	OA	PT	SD	SE	SK	SL	SZ	TR	TZ	UG	ZM	ZW							
W:	AE	AG	AL	AM	AT	AU	AZ	BA	BB	BG	BR	BY	BZ	CA	CH	CN	CO	CR	CU	CZ	DE	DK	
	DM	DZ	EC	EE	ES	FI	GB	GD	GE	GH	GM	HR	HU	ID	IL	IN	IS	JP	KE	KG	KP	KR	
	KZ	LC	LK	LR	LS	LT	LU	LV	MA	MD	MG	MK	MN	MW	MX	MZ	NO	NZ	OM	PH	PL	PT	
	RO	RU	SD	SE	SG	SI	SK	SL	TJ	TM	TN	TR	TT	TZ	UA	UG	UZ	VN	YU	ZA	ZM	ZW	

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003027285	A1	US 2001-919486	20010731
WO 2003012448	A1	WO 2002-US24245	20020730

PRIORITY APPLN. INFO: US 2001-919486 20010731

=> s (apo-phycobiliprotein)  
L2 2 (APO-PHYCOBILIPROTEIN)

=> d l2 ti abs ibib tot

L2 ANSWER 1 OF 2 USPATFULL on STN

TI Engineering of living cells for the expression of holo-phycobiliprotein-based constructs

AB Recombinant cells which express a fluorescent holo-phycobiliprotein fusion protein and methods of use are described. The cells comprises a bilin, a recombinant bilin reductase, an **apo-phycobiliprotein** fusion protein precursor of the fusion protein comprising a corresponding **apo-phycobiliprotein** domain, and a recombinant phycobiliprotein domain-bilin lyase, which components react to form the holo-phycobiliprotein fusion protein. Also described are holo-phycobiliprotein based transcription reporter cells and assays, which cells conditionally express a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:37640 USPATFULL

TITLE: Engineering of living cells for the expression of holo-phycobiliprotein-based constructs

INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES  
Tooley, Aaron J., Berkeley, CA, UNITED STATES  
Cai, Yuping, Carmel, IN, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003027285	A1	20030206
APPLICATION INFO.:	US 2001-919486	A1	20010731 (9)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010		
NUMBER OF CLAIMS:	24		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	3 Drawing Page(s)		
LINE COUNT:	918		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 2 OF 2 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

TI New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-phycobiliprotein fusion protein.

AN 2003-466144 [44] WPIDS

AB US2003027285 A UPAB: 20030710

NOVELTY - A recombinant cell expressing a holo-phycobiliprotein fusion protein comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, is new.

DETAILED DESCRIPTION - A recombinant cell expressing a holo-phycobiliprotein fusion protein comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain. The cell makes and comprises components such as a bilin, a recombinant bilin reductase, an **apo-phycobiliprotein**

fusion protein precursor of the fusion protein comprising a corresponding **apo-phycobiliprotein** domain, and a recombinant phycobiliprotein domain-bilin lyase, which components react inside the cell to form the holo-phycobiliprotein fusion protein.

An INDEPENDENT CLAIM is also included for making a holo-phycobiliprotein fusion protein by growing the cell under conditions where the cell expresses the holo-phycobiliprotein fusion protein.

USE - The cells are useful for expressing holo-phycobiliprotein-based constructs, useful in enzymology and chemistry of phycobiliprotein synthesis. The phycobiliproteins are useful as in vivo fluorescent protein probes.

Dwg.0/3

ACCESSION NUMBER: 2003-466144 [44] WPIDS  
DOC. NO. NON-CPI: N2003-370782  
DOC. NO. CPI: C2003-124291  
TITLE: New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-phycobiliprotein fusion protein.  
DERWENT CLASS: B04 D16 P13 S03  
INVENTOR(S): CAI, Y; GLAZER, A N; TOOLEY, A J  
PATENT ASSIGNEE(S): (CAIY-I) CAI Y; (GLAZ-I) GLAZER A N; (TOOL-I) TOOLEY A J; (REGC) UNIV CALIFORNIA  
COUNTRY COUNT: 100  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003027285	A1	20030206	(200344)*		13
WO 2003012448	A1	20030213	(200344)	EN	
RW:	AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW				
W:	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW				

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003027285	A1	US 2001-919486	20010731
WO 2003012448	A1	WO 2002-US24245	20020730

PRIORITY APPLN. INFO: US 2001-919486 20010731

=> s bilin and phycobiliprotein fusion  
L3 6 BILIN AND PHYCOBILIPROTEIN FUSION

=> d l3 ti abs ibib tot

L3 ANSWER 1 OF 6 USPATFULL on STN

TI Multifunctional recombinant phycobiliprotein-based fluorescent constructs and phycobilisome display

AB The invention provides multifunctional fusion constructs which are rapidly incorporated into a macromolecular structure such as a phycobilisome such that the fusion proteins are separated from one another and unable to self-associate. The invention provides methods and compositions for displaying a functional polypeptide domain on an oligomeric phycobiliprotein, including fusion proteins comprising a functional displayed domain and a functional phycobiliprotein domain incorporated in a functional oligomeric phycobiliprotein. The fusion

proteins provide novel specific labeling reagents.

ACCESSION NUMBER: 2004:18849 USPATFULL  
TITLE: Multifunctional recombinant phycobiliprotein-based  
fluorescent constructs and phycobilisome display  
INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES  
Cai, Yuping, Indianapolis, IN, UNITED STATES  
PATENT ASSIGNEE(S): The Regents of the University of California (U.S.  
corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004014151	A1	20040122
APPLICATION INFO.:	US 2003-617012	A1	20030710 (10)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 1999-469194, filed on 21 Dec 1999, GRANTED, Pat. No. US 6649376		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010		
NUMBER OF CLAIMS:	22		
EXEMPLARY CLAIM:	1		
LINE COUNT:	3039		

L3 ANSWER 2 OF 6 USPATFULL on STN

TI Multifunctional recombinant phycobiliprotein-based fluorescent  
constructs and phycobilisome display  
AB The invention provides multifunctional fusion constructs which are  
rapidly incorporated into a macromolecular structure such as a  
phycobilisome such that the fusion proteins are separated from one  
another and unable to self-associate. The invention provides methods and  
compositions for displaying a functional polypeptide domain on an  
oligomeric phycobiliprotein, including fusion proteins comprising a  
functional displayed domain and a functional phycobiliprotein domain  
incorporated in a functional oligomeric phycobiliprotein. The fusion  
proteins provide novel specific labeling reagents.

ACCESSION NUMBER: 2004:13039 USPATFULL  
TITLE: Multifunctional recombinant phycobiliprotein-based  
fluorescent constructs and phycobilisome display  
INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES  
Cai, Yuping, Indianapolis, IN, UNITED STATES  
PATENT ASSIGNEE(S): The Regents of the University of California (U.S.  
corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004009559	A1	20040115
APPLICATION INFO.:	US 2003-617208	A1	20030710 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 1999-469194, filed on 21 Dec 1999, GRANTED, Pat. No. US 6649376		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010		
NUMBER OF CLAIMS:	22		
EXEMPLARY CLAIM:	1		
LINE COUNT:	3017		

L3 ANSWER 3 OF 6 USPATFULL on STN

TI Multifunctional recombinant phycobiliprotein-based fluorescent  
constructs and phycobilisome display  
AB The invention provides multifunctional fusion constructs which are  
rapidly incorporated into a macromolecular structure such as a

phycobilisome such that the fusion proteins are separated from one another and unable to self-associate. The invention provides methods and compositions for displaying a functional polypeptide domain on an oligomeric phycobiliprotein, including fusion proteins comprising a functional displayed domain and a functional phycobiliprotein domain incorporated in a functional oligomeric phycobiliprotein. The fusion proteins provide novel specific labeling reagents.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:302783 USPATFULL  
 TITLE: Multifunctional recombinant phycobiliprotein-based fluorescent constructs and phycobilisome display  
 INVENTOR(S): Glazer, Alexander N., Berkeley, CA, United States  
 Cai, Yuping, Indianapolis, IN, United States  
 PATENT ASSIGNEE(S): The Regents of the University of California, Oakland, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6649376	B1	20031118
APPLICATION INFO.:	US 1999-469194		19991221 (9)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	GRANTED		
PRIMARY EXAMINER:	Low, Christopher S. F.		
ASSISTANT EXAMINER:	Kam, Chih-Min		
LEGAL REPRESENTATIVE:	Osman, Richard Aron		
NUMBER OF CLAIMS:	18		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	0 Drawing Figure(s); 0 Drawing Page(s)		
LINE COUNT:	2924		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 4 OF 6 USPATFULL on STN

TI Engineering of living cells for the expression of holo-phycobiliprotein-based constructs  
 AB Recombinant cells which express a fluorescent holo-**phycobiliprotein fusion** protein and methods of use are described. The cells comprises a **bilin**, a recombinant **bilin** reductase, an apo-**phycobiliprotein fusion** protein precursor of the fusion protein comprising a corresponding apo-phycobiliprotein domain, and a recombinant phycobiliprotein domain-**bilin** lyase, which components react to form the holo-**phycobiliprotein fusion** protein. Also described are holo-phycobiliprotein based transcription reporter cells and assays, which cells conditionally express a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:37640 USPATFULL  
 TITLE: Engineering of living cells for the expression of holo-phycobiliprotein-based constructs  
 INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES  
 Tooley, Aaron J., Berkeley, CA, UNITED STATES  
 Cai, Yuping, Carmel, IN, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003027285	A1	20030206
APPLICATION INFO.:	US 2001-919486	A1	20010731 (9)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010		
NUMBER OF CLAIMS:	24		

EXEMPLARY CLAIM: 1  
NUMBER OF DRAWINGS: 3 Drawing Page(s)  
LINE COUNT: 918  
CAS INDEXING IS AVAILABLE FOR THIS PATENT..

L3 ANSWER 5 OF 6 USPATFULL on STN

TI Recombinant phycobiliprotein and phycobiliprotein linker fusion proteins and uses therefore

AB This invention is directed to the utilization of the developing methods for molecular manipulation of cyanobacteria and red algae (and potentially cryptomonad algae) to express of phycobiliproteins and phycobiliprotein linker fusion proteins and their utilization as phycobiliprotein, phycobilisome and subassembly based reagents. In particular, the present invention relates to a method for a specific binding assay to determine a target moiety which is a member of a specific binding pair, and provides an improvement in the method comprising using a detectable label which is a fusion protein containing both a phycobiliprotein domain and another domain corresponding to a first member of a specific binding pair, where the fusion protein binds to a second member of the specific binding pair to provide a detectable labeled complex. The domain derived from the first member of the specific binding pair can be directly fused to the phycobiliprotein or phycobiliprotein linker domain or be separated by a spacer that allows correct folding of both domains.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2001:237667 USPATFULL

TITLE: Recombinant phycobiliprotein and phycobiliprotein linker fusion proteins and uses therefore

INVENTOR(S): Allnutt, F.C. Thomas, Port Deposit, MD, United States  
Toole, Colleen Mary, New Winson, MD, United States  
Morseman, John Peter, Columbia, MD, United States

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2001055783	A1	20011227
APPLICATION INFO.:	US 2001-882093	A1	20010618 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-211784P	20000616 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	BROBECK, PHLEGER & HARRISON, LLP, ATTN: INTELLECTUAL PROPERTY DEPARTMENT, 1333 H STREET, N.W. SUITE 800, WASHINGTON, DC, 20005	

NUMBER OF CLAIMS: 46  
EXEMPLARY CLAIM: 1  
LINE COUNT: 1218

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 6 OF 6 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

TI New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-**phycobiliprotein fusion** protein.

AN 2003-466144 [44] WPIDS

AB US2003027285 A UPAB: 20030710

NOVELTY - A recombinant cell expressing a holo-**phycobiliprotein fusion** protein comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, is new.

DETAILED DESCRIPTION - A recombinant cell expressing a holo-**phycobiliprotein fusion** protein comprising a



heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain. The cell makes and comprises components such as a **bilin**, a recombinant **bilin** reductase, an apo-**phycobiliprotein fusion** protein precursor of the fusion protein comprising a corresponding apo-phycobiliprotein domain, and a recombinant phycobiliprotein domain-**bilin** lyase, which components react inside the cell to form the holo-**phycobiliprotein fusion** protein.

An INDEPENDENT CLAIM is also included for making a holo-**phycobiliprotein fusion** protein by growing the cell under conditions where the cell expresses the holo-**phycobiliprotein fusion** protein.

USE - The cells are useful for expressing holo-phycobiliprotein-based constructs, useful in enzymology and chemistry of phycobiliprotein synthesis. The phycobiliproteins are useful as in vivo fluorescent protein probes.

Dwg.0/3

ACCESSION NUMBER: 2003-466144 [44] WPIDS  
 DOC. NO. NON-CPI: N2003-370782  
 DOC. NO. CPI: C2003-124291  
 TITLE: New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-**phycobiliprotein fusion** protein.  
 DERWENT CLASS: B04 D16 P13 S03  
 INVENTOR(S): CAI, Y; GLAZER, A N; TOOLEY, A J  
 PATENT ASSIGNEE(S): (CAIY-I) CAI Y; (GLAZ-I) GLAZER A N; (TOOL-I) TOOLEY A J; (REGC) UNIV CALIFORNIA  
 COUNTRY COUNT: 100  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003027285	A1	20030206	(200344)*		13
WO 2003012448	A1	20030213	(200344)	EN	
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW					

# APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003027285	A1	US 2001-919486	20010731
WO 2003012448	A1	WO 2002-US24245	20020730

PRIORITY APPLN. INFO: US 2001-919486 20010731

=> d his

(FILE 'HOME' ENTERED AT 15:39:14 ON 02 FEB 2004)

FILE 'MEDLINE, USPATFULL, DGENE, EMBASE, WPIDS, FSTA, BIOSIS' ENTERED AT 15:39:39 ON 02 FEB 2004

L1 2 S (HOLO-PHYCOBILIPROTEIN)  
 L2 2 S (APO-PHYCOBILIPROTEIN)  
 L3 6 S BILIN AND PHYCOBILIPROTEIN FUSION

=> s l1 and bilin reductase  
L4 2 L1 AND BILIN REDUCTASE

=> s l2 and HO1  
L5 2 L2 AND HO1

=> s HO1  
L6 441 HO1

=> s l6 and phycobiliprotein  
L7 4 L6 AND PHYCOBILIPROTEIN

=> d l7 ti abs ibib tot

L7 ANSWER 1 OF 4 USPATFULL on STN  
TI HY2 family of bilin reductases  
AB This invention identifies a novel family of bilin reductases. Designated herein HY bilin reductases, the enzymes of this invention are useful in a wide variety of contexts including but not limited to the conversion of biliverdins to phytobilins and the assembly of holophytochromes or phytofluors.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:152713 USPATFULL  
TITLE: HY2 family of bilin reductases  
INVENTOR(S): Lagarias, John Clark, Davis, CA, UNITED STATES  
Kochi, Takayuki, Ikoma, JAPAN  
Frankenberg, Nicole, Davis, CA, UNITED STATES  
Gambetta, Gregory A., Davis, CA, UNITED STATES  
Montgomery, Beronda L., Bloomington, IN, UNITED STATES  
PATENT ASSIGNEE(S): The Regents of the University of California (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003104379	A1	20030605
APPLICATION INFO.:	US 2001-870406	A1	20010529 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-271758P	20010226 (60)
	US 2000-210286P	20000608 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	QUINE INTELLECTUAL PROPERTY LAW GROUP, P.C., P O BOX 458, ALAMEDA, CA, 94501	
NUMBER OF CLAIMS:	79	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	23 Drawing Page(s)	
LINE COUNT:	4474	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 2 OF 4 USPATFULL on STN  
TI Light controlled gene expression utilizing heterologous phytochromes  
AB This invention relates to the field of gene expression. In particular this invention relates to the use of heterologous phytochromes to translocate polypeptides into the nucleus of a cell. Where the polypeptides comprise transactivators or repressors this invention provides a system for light-directed gene expression.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:106324 USPATFULL  
TITLE: Light controlled gene expression utilizing heterologous phytochromes

INVENTOR(S): Lagarias, John Clark, Davis, CA, UNITED STATES  
 Kochi, Takayuki, Daigakusyuku sya, JAPAN  
 Frankenberg, Nicole, Davis, CA, UNITED STATES  
 Gambetta, Gregory A., Davis, CA, UNITED STATES  
 Montgomery, Beronda L., Bloomington, IN, UNITED STATES  
 PATENT ASSIGNEE(S): The Regents of the University of California (U.S.  
 corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003073235	A1	20030417
APPLICATION INFO.:	US 2002-159901	A1	20020529 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-294463P	20010529 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	QUINE INTELLECTUAL PROPERTY LAW GROUP, P.C., P O BOX 458, ALAMEDA, CA, 94501	
NUMBER OF CLAIMS:	14	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	20 Drawing Page(s)	
LINE COUNT:	4485	
CAS INDEXING IS AVAILABLE FOR THIS PATENT.		

L7 ANSWER 3 OF 4 USPATFULL on STN

TI Engineering of living cells for the expression of holo-  
**phycobiliprotein**-based constructs  
 AB Recombinant cells which express a fluorescent holo-  
**phycobiliprotein** fusion protein and methods of use are  
 described. The cells comprises a bilin, a recombinant bilin reductase,  
 an apo-**phycobiliprotein** fusion protein precursor of the fusion  
 protein comprising a corresponding apo-**phycobiliprotein**  
 domain, and a recombinant **phycobiliprotein** domain-bilin lyase,  
 which components react to form the holo-**phycobiliprotein**  
 fusion protein. Also described are holo-**phycobiliprotein** based  
 transcription reporter cells and assays, which cells conditionally  
 express a heterologous-to-the-cell, fluorescent, first holo-  
**phycobiliprotein** domain.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:37640 USPATFULL  
 TITLE: Engineering of living cells for the expression of holo-  
**phycobiliprotein**-based constructs  
 INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES  
 Tooley, Aaron J., Berkeley, CA, UNITED STATES  
 Cai, Yuping, Carmel, IN, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003027285	A1	20030206
APPLICATION INFO.:	US 2001-919486	A1	20010731 (9)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010		
NUMBER OF CLAIMS:	24		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	3 Drawing Page(s)		
LINE COUNT:	918		
CAS INDEXING IS AVAILABLE FOR THIS PATENT.			

L7 ANSWER 4 OF 4 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

TI New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-**phycobiliprotein** domain fused a heterologous protein domain, useful for expressing a holo-**phycobiliprotein** fusion protein.

AN 2003-466144 [44] WPIDS

AB US2003027285 A UPAB: 20030710

NOVELTY - A recombinant cell expressing a holo-**phycobiliprotein** fusion protein comprising a heterologous-to-the-cell, fluorescent, first holo-**phycobiliprotein** domain fused a heterologous protein domain, is new.

DETAILED DESCRIPTION - A recombinant cell expressing a holo-**phycobiliprotein** fusion protein comprising a heterologous-to-the-cell, fluorescent, first holo-**phycobiliprotein** domain fused a heterologous protein domain. The cell makes and comprises components such as a bilin, a recombinant bilin reductase, an apo-**phycobiliprotein** fusion protein precursor of the fusion protein comprising a corresponding apo-**phycobiliprotein** domain, and a recombinant **phycobiliprotein** domain-bilin lyase, which components react inside the cell to form the holo-**phycobiliprotein** fusion protein.

An INDEPENDENT CLAIM is also included for making a holo-**phycobiliprotein** fusion protein by growing the cell under conditions where the cell expresses the holo-**phycobiliprotein** fusion protein.

USE - The cells are useful for expressing holo-**phycobiliprotein**-based constructs, useful in enzymology and chemistry of **phycobiliprotein** synthesis. The **phycobiliproteins** are useful as in vivo fluorescent protein probes.

Dwg.0/3

ACCESSION NUMBER: 2003-466144 [44] WPIDS

DOC. NO. NON-CPI: N2003-370782

DOC. NO. CPI: C2003-124291

TITLE: New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-**phycobiliprotein** domain fused a heterologous protein domain, useful for expressing a holo-**phycobiliprotein** fusion protein.

DERWENT CLASS: B04 D16 P13 S03

INVENTOR(S): CAI, Y; GLAZER, A N; TOOLEY, A J

PATENT ASSIGNEE(S): (CAIY-I) CAI Y; (GLAZ-I) GLAZER A N; (TOOL-I) TOOLEY A J; (REGC) UNIV CALIFORNIA

COUNTRY COUNT: 100

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003027285	A1	20030206	(200344)*		13
WO 2003012448	A1	20030213	(200344)	EN	
RW:	AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW				
W:	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW				

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003027285	A1	US 2001-919486	20010731
WO 2003012448	A1	WO 2002-US24245	20020730

PRIORITY APPLN. INFO: US 2001-919486 20010731

=> s PCB  
L8 78751 PCB

=> S PcyA  
L9 26 PCYA

=> s PecE or PecF  
L10 1032 PECE OR PECF

=> s l10 and l9  
L11 2 L10 AND L9

=> s l8 and l9  
L12 12 L8 AND L9

=> s l12 and l10  
L13 2 L12 AND L10

=> d l13 ti abs ibib tot

L13 ANSWER 1 OF 2 USPATFULL on STN  
TI Engineering of living cells for the expression of holo-phycobiliprotein-based constructs  
AB Recombinant cells which express a fluorescent holo-phycobiliprotein fusion protein and methods of use are described. The cells comprises a bilin, a recombinant bilin reductase, an apo-phycobiliprotein fusion protein precursor of the fusion protein comprising a corresponding apo-phycobiliprotein domain, and a recombinant phycobiliprotein domain-bilin lyase, which components react to form the holo-phycobiliprotein fusion protein. Also described are holo-phycobiliprotein based transcription reporter cells and assays, which cells conditionally express a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:37640 USPATFULL  
TITLE: Engineering of living cells for the expression of holo-phycobiliprotein-based constructs  
INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES  
Tooley, Aaron J., Berkeley, CA, UNITED STATES  
Cai, Yuping, Carmel, IN, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003027285	A1	20030206
APPLICATION INFO.:	US 2001-919486	A1	20010731 (9)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010		
NUMBER OF CLAIMS:	24		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	3 Drawing Page(s)		
LINE COUNT:	918		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 2 OF 2 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN  
TI New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-phycobiliprotein fusion protein.  
AN 2003-466144 [44] WPIDS  
AB US2003027285 A UPAB: 20030710  
NOVELTY - A recombinant cell expressing a holo-phycobiliprotein fusion

protein comprising a heterologous-to-the-cell, fluorescent, first holo-phytycobiliprotein domain fused a heterologous protein domain, is new.

DETAILED DESCRIPTION - A recombinant cell expressing a holo-phytycobiliprotein fusion protein comprising a heterologous-to-the-cell, fluorescent, first holo-phytycobiliprotein domain fused a heterologous protein domain. The cell makes and comprises components such as a bilin, a recombinant bilin reductase, an apo-phytycobiliprotein fusion protein precursor of the fusion protein comprising a corresponding apo-phytycobiliprotein domain, and a recombinant phytycobiliprotein domain-bilin lyase, which components react inside the cell to form the holo-phytycobiliprotein fusion protein.

An INDEPENDENT CLAIM is also included for making a holo-phytycobiliprotein fusion protein by growing the cell under conditions where the cell expresses the holo-phytycobiliprotein fusion protein.

USE - The cells are useful for expressing holo-phytycobiliprotein-based constructs, useful in enzymology and chemistry of phytycobiliprotein synthesis. The phytycobiliproteins are useful as in vivo fluorescent protein probes.

Dwg.0/3

ACCESSION NUMBER: 2003-466144 [44] WPIDS  
DOC. NO. NON-CPI: N2003-370782  
DOC. NO. CPI: C2003-124291  
TITLE: New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phytycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-phytycobiliprotein fusion protein.  
DERWENT CLASS: B04 D16 P13 S03  
INVENTOR(S): CAI, Y; GLAZER, A N; TOOLEY, A J  
PATENT ASSIGNEE(S): (CAIY-I) CAI Y; (GLAZ-I) GLAZER A N; (TOOL-I) TOOLEY A J; (REGC) UNIV CALIFORNIA  
COUNTRY COUNT: 100  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003027285	A1	20030206	(200344)*		13
WO 2003012448	A1	20030213	(200344)	EN	
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003027285	A1	US 2001-919486	20010731
WO 2003012448	A1	WO 2002-US24245	20020730

PRIORITY APPLN. INFO: US 2001-919486 20010731

=> s PEB

L14 2404 PEB

=> s l14 and l12

L15 5 L14 AND L12

=> d l15 ti abs ibib tot

L15 ANSWER 1 OF 5 USPATFULL on STN

TI HY2 family of bilin reductases  
AB This invention identifies a novel family of bilin reductases. Designated herein HY bilin reductases, the enzymes of this invention are useful in a wide variety of contexts including but not limited to the conversion of biliverdins to phytobilins and the assembly of holophytochromes or phytofluors.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:152713 USPATFULL  
TITLE: HY2 family of bilin reductases  
INVENTOR(S): Lagarias, John Clark, Davis, CA, UNITED STATES  
Kochi, Takayuki, Ikoma, JAPAN  
Frankenberg, Nicole, Davis, CA, UNITED STATES  
Gambetta, Gregory A., Davis, CA, UNITED STATES  
Montgomery, Beronda L., Bloomington, IN, UNITED STATES  
PATENT ASSIGNEE(S): The Regents of the University of California (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003104379	A1	20030605
APPLICATION INFO.:	US 2001-870406	A1	20010529 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-271758P	20010226 (60)
	US 2000-210286P	20000608 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	QUINE INTELLECTUAL PROPERTY LAW GROUP, P.C., P O BOX 458, ALAMEDA, CA, 94501	
NUMBER OF CLAIMS:	79	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	23 Drawing Page(s)	
LINE COUNT:	4474	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 2 OF 5 USPATFULL on STN

TI Light controlled gene expression utilizing heterologous phytochromes  
AB This invention relates to the field of gene expression. In particular this invention relates to the use of heterologous phytochromes to translocate polypeptides into the nucleus of a cell. Where the polypeptides comprise transactivators or repressors this invention provides a system for light-directed gene expression.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:106324 USPATFULL  
TITLE: Light controlled gene expression utilizing heterologous phytochromes  
INVENTOR(S): Lagarias, John Clark, Davis, CA, UNITED STATES  
Kochi, Takayuki, Daigakusyuku sya, JAPAN  
Frankenberg, Nicole, Davis, CA, UNITED STATES  
Gambetta, Gregory A., Davis, CA, UNITED STATES  
Montgomery, Beronda L., Bloomington, IN, UNITED STATES  
PATENT ASSIGNEE(S): The Regents of the University of California (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003073235	A1	20030417
APPLICATION INFO.:	US 2002-159901	A1	20020529 (10)

NUMBER	DATE
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PRIORITY INFORMATION: US 2001-294463P 20010529 (60)  
DOCUMENT TYPE: Utility  
FILE SEGMENT: APPLICATION  
LEGAL REPRESENTATIVE: QUINE INTELLECTUAL PROPERTY LAW GROUP, P.C., P O BOX  
458, ALAMEDA, CA, 94501  
NUMBER OF CLAIMS: 14  
EXEMPLARY CLAIM: 1  
NUMBER OF DRAWINGS: 20 Drawing Page(s)  
LINE COUNT: 4485  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 3 OF 5 USPATFULL on STN

TI Engineering of living cells for the expression of holo-phycobiliprotein-  
based constructs  
AB Recombinant cells which express a fluorescent holo-phycobiliprotein  
fusion protein and methods of use are described. The cells comprises a  
bilin, a recombinant bilin reductase, an apo-phycobiliprotein fusion  
protein precursor of the fusion protein comprising a corresponding  
apo-phycobiliprotein domain, and a recombinant phycobiliprotein  
domain-bilin lyase, which components react to form the  
holo-phycobiliprotein fusion protein. Also described are  
holo-phycobiliprotein based transcription reporter cells and assays,  
which cells conditionally express a heterologous-to-the-cell,  
fluorescent, first holo-phycobiliprotein domain.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:37640 USPATFULL  
TITLE: Engineering of living cells for the expression of  
holo-phycobiliprotein-based constructs  
INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES  
Tooley, Aaron J., Berkeley, CA, UNITED STATES  
Cai, Yuping, Carmel, IN, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003027285	A1	20030206
APPLICATION INFO.:	US 2001-919486	A1	20010731 (9)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010		
NUMBER OF CLAIMS:	24		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	3 Drawing Page(s)		
LINE COUNT:	918		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 4 OF 5 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

TI New recombinant cell comprising a heterologous-to-the-cell, fluorescent,  
first holo-phycobiliprotein domain fused a heterologous protein domain,  
useful for expressing a holo-phycobiliprotein fusion protein.  
AN 2003-466144 [44] WPIDS  
AB US2003027285 A UPAB: 20030710  
NOVELTY - A recombinant cell expressing a holo-phycobiliprotein fusion  
protein comprising a heterologous-to-the-cell, fluorescent, first  
holo-phycobiliprotein domain fused a heterologous protein domain, is new.  
DETAILED DESCRIPTION - A recombinant cell expressing a  
holo-phycobiliprotein fusion protein comprising a heterologous-to-the-  
cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous  
protein domain. The cell makes and comprises components such as a bilin, a  
recombinant bilin reductase, an apo-phycobiliprotein fusion protein  
precursor of the fusion protein comprising a corresponding  
apo-phycobiliprotein domain, and a recombinant phycobiliprotein  
domain-bilin lyase, which components react inside the cell to form the



holo-phycobiliprotein fusion protein.

An INDEPENDENT CLAIM is also included for making a holo-phycobiliprotein fusion protein by growing the cell under conditions where the cell expresses the holo-phycobiliprotein fusion protein.

USE - The cells are useful for expressing holo-phycobiliprotein-based constructs, useful in enzymology and chemistry of phycobiliprotein synthesis. The phycobiliproteins are useful as in vivo fluorescent protein probes.

Dwg.0/3

ACCESSION NUMBER: 2003-466144 [44] WPIDS  
DOC. NO. NON-CPI: N2003-370782  
DOC. NO. CPI: C2003-124291  
TITLE: New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-phycobiliprotein fusion protein.  
DERWENT CLASS: B04 D16 P13 S03  
INVENTOR(S): CAI, Y; GLAZER, A N; TOOLEY, A J  
PATENT ASSIGNEE(S): (CAIY-I) CAI Y; (GLAZ-I) GLAZER A N; (TOOL-I) TOOLEY A J; (REGC) UNIV CALIFORNIA  
COUNTRY COUNT: 100  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003027285	A1	20030206	(200344)*		13
WO 2003012448	A1	20030213	(200344)	EN	
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003027285	A1	US 2001-919486	20010731
WO 2003012448	A1	WO 2002-US24245	20020730

PRIORITY APPLN. INFO: US 2001-919486 20010731

L15 ANSWER 5 OF 5 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN  
TI Novel isolated HY2 family bilin reductase having bilin reductase activity, useful for converting biliverdin to phytobilin, and for producing a photoactive holophytochrome and/or phytofluors.

AN 2002-195566 [25] WPIDS

AB WO 200194548 A UPAB: 20030703

NOVELTY - An isolated HY2 family bilin reductase (I) comprising an amino acid consensus sequence as given in specification and having bilin reductase activity, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) a nucleic acid (II) encoding (I);
- (2) a cell (III) comprising a heterologous nucleic acid comprising (II);
- (3) a nucleic acid (IV) comprising a nucleic acid that specifically hybridizes with (II) under stringent conditions and that encodes a polypeptide having bilin reductase activity, where the nucleic acid does not encode an hvrccr or an atrccr polypeptide;
- (4) a cell (V) comprising a heme oxygenase; an apophytochrome; and a ferredoxin-dependent bilin reductase; where the cell produces a

photoactive holophytochrome and where one or more of the apophytochrome and the ferredoxin-dependent bilin reductase are expressed by heterologous nucleic acids; and

(5) recombinant nucleic acid (VI) comprising a nucleic acid encoding a functional heme oxidoreductase; and a nucleic acid encoding a functional ferredoxin-dependent bilin reductase.

USE - (I) (a ycp2snpy or ycp3snpy) is useful for converting biliverdin to phytobilin where the bilin reductase is cyanobacterial, algal, or plant bilin reductase which is recombinantly expressed. The bilin reductase is contacted with biliverdin ex vivo, or in a cell where the bilin reductase is a heterologous polypeptide. The method further involves contacting the phytochromobilin with a second bilin reductase such as PeebB to produce a phytochrome or phytofluor. (II) is useful for detecting expression of a polypeptide which involves providing a cell comprising a nucleic acid encoding an apophytochrome; and (II) encoding a bilin reductase that produces a phytobilin that assembles with the apophytochrome to produce a phytofluor; and detecting an optical signal produced by the phytofluor. (I) in combination with other enzymes is useful for producing photoactive holophytochrome which involves co-expressing in a cell: a heme oxygenase an apophytochrome; and a ferredoxin-dependent bilin reductase; whereby the cell produces the photoactive holophytochrome and where one or more of the apophytochrome and the ferredoxin-dependent bilin reductase are expressed by heterologous nucleic acids. Preferably, a photoactive holophytochrome that is not a phytofluor, is produced by coexpressing hemoxygenase, an apophytochrome, and ferredoxin-dependent bilin reductase such as HY2 family bilin reductase (e.g., HY2 or **pcyA**) in an algal, plant, yeast, bacterial, insect or mammalian cell. Preferably, all the three components are expressed by a heterologous nucleic acids. Optionally, a photoactive holophytochrome that is a phytofluor is produced, where the apophytochrome is expressed as a fusion protein with a protein that is to be labeled with the phytofluor. The method preferably involves expressing ferredoxin-dependent bilin reductase **pebA** and/or **pebB** in a bacterial cell. The method further involves recovering the photoactive holophytochrome from the cell (all claimed).

The availability of genes for bilin reductases that mediate the biosynthesis of phytochromobilin, phytocyanobilin (**PCB**), and phycoerythrobilin (**PEB**) provides the ability to engineer the biosynthesis of **PEB** in any biliverdin (BV)-producing organisms. Thus, phytofluors potentially can be produced in any ferredoxin-containing organisms. By introducing the **pcyA** gene into wild-type and chromophore-deficient mutant plants the wavelength specificity of phytochrome could also be changed which may favorably alter plant growth and development in the field environment. Introduction of the **pebA** and **pebB** genes into plants potentially will shunt the conversion of BV to **PEB**, yielding photomorphogenetically challenged plants with fluorescent phytochromes. This would be especially useful for the analysis of the temporal and spatial patterns of phytochrome expression in plants.

DESCRIPTION OF DRAWING(S) - The figure shows phytochrome biosynthesis in Arabidopsis

Dwg.2/16

ACCESSION NUMBER:	2002-195566 [25]	WPIDS
DOC. NO. CPI:	C2002-060370	
TITLE:	Novel isolated HY2 family bilin reductase having bilin reductase activity, useful for converting biliverdin to phytobilin, and for producing a photoactive holophytochrome and/or phytofluors.	
DERWENT CLASS:	B04 D16	
INVENTOR(S):	FRANKENBERG, N; GAMBETTA, G A; KOCHI, T; LAGARIAS, J C; MONTGOMERY, B L	
PATENT ASSIGNEE(S):	(REGC) UNIV CALIFORNIA	
COUNTRY COUNT:	23	
PATENT INFORMATION:		

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001094548	A2	20011213	(200225)	*	EN 102
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR					
W: CA JP					
EP 1290135	A2	20030312	(200320)		EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR					
US 2003104379	A1	20030605	(200339)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001094548	A2	WO 2001-US18326	20010605
EP 1290135	A2	EP 2001-942007	20010605
		WO 2001-US18326	20010605
US 2003104379	A1 Provisional	US 2000-210286P	20000608
	Provisional	US 2001-271758P	20010226
		US 2001-870406	20010529

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 1290135	A2 Based on	WO 2001094548

PRIORITY APPLN. INFO: US 2001-870406 20010529; US 2000-210286P  
20000608; US 2001-271758P 20010226

## Refine Search

### Search Results -

Terms	Documents
CpcE and L6	1

Database:

US Pre-Grant Publication Full-Text Database  
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Search:

L7





### Search History

DATE: Monday, February 02, 2004    [Printable Copy](#)    [Create Case](#)

#### Set Name Query

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#### Hit Count Set Name

result set

*DB=USPT; PLUR=YES; OP=OR*

<u>L7</u>	CpcE and L6	1	<u>L7</u>
<u>L6</u>	PCB and L5	81	<u>L6</u>
<u>L5</u>	Phytochrome domain and L4	18429	<u>L5</u>
<u>L4</u>	l1 and domain	18324	<u>L4</u>
<u>L3</u>	cell and L2	37012	<u>L3</u>
<u>L2</u>	apo-phycobiliprotein fusion	76513	<u>L2</u>
<u>L1</u>	holo-phycobiliprotein fusion	76513	<u>L1</u>

END OF SEARCH HISTORY

## Hit List

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Search Results - Record(s) 1 through 1 of 1 returned.

☐ 1. Document ID: US 6649376 B1

L7: Entry 1 of 1

File: USPT

Nov 18, 2003

US-PAT-NO: 6649376

DOCUMENT-IDENTIFIER: US 6649376 B1

TITLE: Multifunctional recombinant phycobiliprotein-based fluorescent constructs and phycobilisome display

DATE-ISSUED: November 18, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Glazer; Alexander N.	Berkeley	CA		
Cai; Yuping	Indianapolis	IN		

US-CL-CURRENT: [435/69.7](#); [435/183](#), [435/252.1](#), [435/320.1](#), [435/69.1](#), [435/7.7](#), [435/822](#), [436/501](#), [436/519](#), [436/536](#), [436/63](#), [530/350](#), [536/23.1](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawings
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Terms	Documents
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